

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)1U/536600  
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Applicant's or agent's file reference P005018-PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/BR 02/00175	International filing date (day/month/year) 06.12.2002	Priority date (day/month/year) 06.12.2002
International Patent Classification (IPC) or both national classification and IPC C08K5/04		
Applicant COGNIS BRASIL LTDA. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:
  - I    ☒ Basis of the opinion
  - II   ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V   ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  10.05.2004	Date of completion of this report  07.07.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Kaul-Buchberger, E  Telephone No. +49 89 2399-8296  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/BR 02/00175**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-4 as originally filed

**Claims, Numbers**

1-11 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1 = US-A-2001/0044486

D2 = GB-A-934689

- 2.1. Document **D1**, which is considered to represent the most relevant state of the art, discloses (cf. claims 1 and 2 and examples) a plastisol composition comprising a PVC homopolymer, a primary plasticizer (e.g. esters of phthalic acid, benzoates, organic phosphates, diesters of dicarboxylic acids,..) and a C<sub>1</sub>-C<sub>2</sub> alkyl monoester of a fatty acid as a secondary plasticizer (e.g. methyl esters of rapeseed oil fatty acids). The examples of D1 show (table 1) that the addition of the secondary plasticizer has no effect on the shore A hardness. The problem solved in D1 was (paragraph [0005] and [0006, first 5 lines]) to find substances which are suitable to replace the phthalic acid esters by up to 50% without any adverse effect on the properties.
- 2.2. The subject-matter of independent claims 1, 4 and 8 differs from the disclosure of D1 in that the primary plasticizers are esters of fatty acids with 8 to 24 carbon atoms and isobutanol and contain at least one epoxy group per molecule.
- 2.3. The subject-matter of independent claims 1, 4 and 8, as well as of dependent claims 2, 3, 5-7 and 9-11 is therefore new (Article 33(2) PCT).
- 3.1. The problem to be solved by the present invention is regarded as to provide phthalic acid ester free plasticizer for PVC, which lead to products with the same shore A hardness and significant reduced viscosity compared with PVC containing dioctylphthalate as plasticizer.
- 3.2. The solution to this problem proposed in independent claims 1, 4 and 8 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:  
Although, D2 discloses (claim 8 and examples) PVC resin composition comprising

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as plasticizer only a mixture of lower alkyl alcohol esters of epoxidized fatty acids (e.g. isobutyl ester of epoxidized linseed oil fatty acids, example II), the cited literature does not suggest to combine isobutyl esters of fatty acids, which contain at least one epoxy group per molecule with one or more methyl esters of fatty acids with 16 to 18 carbon atoms to obtain plasticized PVC compositions with good shore A hardness and low viscosity.

- 3.4. Therefore, the subject-matter of independent claims 1, 4 and 8 meets the requirements of Article 33(3) PCT.
- 3.5. Claims 2, 3, 5-7 and 9-11 are dependent on claims 1, 4 and 8, respectively, and as such also meet the requirements of the PCT with respect to inventive step.
4. For all claims (1-11) industrial applicability is acknowledged.